Technology Assessment in Non-PTA Countries: An Overview of Recent Developments in Europe

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Introduction

Despite recent activities to promote parliamentary technology assessment (PTA), there has not been a concrete increase in the number of these institutions in the West. PTA can be understood as an effort to mediate between science and politics and their knowledge claims (Ganzevles, van Est, and Nentwich 2014). In fact, PTA acts as an agent that mediates between two different processes (i.e., policy and science) when they can interact. This work aims to describe the latest developments in European countries or regions that lack a structure to develop PTA activities (named non-PTA). They are countries or regions where parliamentary-oriented TA activities have not yet resulted in a formal structure, but where TA-related activities can be detected to some extent. This chapter will concentrate on activities in Portugal, Wallonia, and other Central and Eastern countries such as the Czech Republic, Hungary, Poland, Lithuania and Bulgaria. Catalonia is mentioned as a specific case where a formal PTA structure exists but the way it is organized and financed is similar to the national and regional experiences at the non-PTA countries.

The focus on European non-PTA countries can provide clues for observing other developments in other parts of the world by emphasizing local

developments. In fact, although the history of TA in Europe shows that it is possible to identify overall trends toward the establishment of TA, their local contexts might be more decisive for understanding the possible emergence of structures related to TA (Ganzevles, van Est, and Nentwich 2014).

Recently, a new collection of texts was published[47] concerning the historical paths of TA and the new efforts to institutionalize it in several countries around the world. The texts mostly addressed the different forms of TA that have developed and are developing Europe, in an effort to explain the external and internal contexts that might allow the launch of TA in some countries and regions. Most of this research was an outcome of the PACITA project whose aim was to stimulate reflection in regions and countries with established PTA organizations as well as in other European states with an interest in PTA. This paper is significantly based on these research outputs.

These issues can be of interest to those in the TA-related community and policy makers in Japan (and other East Asian regions) who do not have a formalized PTA system. The discussions and attempts being made in some European countries can give some indication of the challenges and possibilities for the institutional formalization of TA.

This paper argues that there are some elements of proximity in PTA between European countries and Japan. For example, Ganzevles, van Est and Nentwich (2014) write that a "number of scholars have looked for relationships among the arrival of different concepts for (parliamentary) TA in various countries and regions". The authors also mention that Meyer (1999) argues that PTA has broadened from an expert-based,

47 The texts were published in English in the journal *Technikfolgenabschätzung – Theorie und Praxis* (2015, 24, 1).

parliament-oriented concept in the USA to concepts in Europe that have opened up to industry, other stakeholders, and the public at large.

Other authors such as Delvenne, Fallon, and Brunet (2011) suggest that PTA is evolving on an "overall reflexivity pathway", "on which some PTAs have moved farther than others". Furthermore, Ganzevles, van Est and Nentwich assert that "in this pathway, PTA has moved away from a mainly analytical activity that is 'aimed at providing decision-makers with an objective analysis of the effects of technology on political agenda, decision-making processes and society as a whole', and has opened up more to plurality and uncertainty, thereby 'acknowledging and responding to the limitations of modern traditions'" (Ganzevles, van Est and Nentwich, 2014: 298).

In the same way, the academic and political debate in Japan on the technology assessment options reveals similar elements about how to improve PTA activities. For example, Shiroyama et al. (2009: 5) points out that one of the problems of TA activities in Japan is its limited effectiveness with narrowly conceived feedback channels. The authors point to the need to pursue broader ways of communicating the TA results, such as identifying issues and setting the agenda (Shiroyama et al., 2009: 5).It therefore seems that the proximity between these countries is greater than the differences that separate them. In the following pages we will try to demonstrate this issue by considering some of the elements of European reality and experience.

Regional Processes of Institutionalization: The Cases of Catalonia and Wallonia

There are important European developments at the regional level. In fact, there is a success story in the Catalonia autonomous community of Spain,

which has developed different formats for more than a decade. In 1999, the Catalan government created CACIT, an Advisory Commission on Science and Technology; in 2003, the Parliament urged the government to formally link CACIT to the Catalan Parliament; in 2008, CAPCIT48 was formally established and started to function closer to a shared parliament-science model; and in 2009, CAPCIT became member of EPTA49 (Böhle and Moniz 2015). Presently, CAPCIT can be seen as a "forum" composed of 10 parliamentarians and 10 representatives of the main scientific institutions of the region, producing reports and advice with no staff or budget (Böhle and Moniz 2015).

There has been another significant development in the TA landscape at the regional level. In fact, there is an emerging case of institutionalization of TA in the Wallonia region of the Belgium federation. The context is related to the development of STI policies in the region over the last fifteen years, which have become a basis of Walloon regional policy making, according to Delvenne et al. (2015). These developments were accompanied by an increase of interest in TA in regional governing bodies and with policy makers. Furthermore, TA activities gained momentum in Wallonia from the interaction between the University of Liège and regional representatives. These efforts led to a proposal for a parliamentary decree to create a TA institute linked to the parliament (Delvenne et al. 2015).

48 CAPCIT is the acronym for the Advisory Board of the Parliament of Catalonia for Science and Technology.

49 According to Böhle and Moniz (2015), CAPCIT is a mixed body composed by 20 members, half of them representing MPs and the other half the main scientific and technical institutions of Catalonia. "All the political parties are represented in this group, to which two members of the Presiding Board and the President of the Parliament – who is also the president of this mixed body – belong" (Böhle and Moniz 2015, 30).

A few years later, in May, 2011, two regional ministers announced a joint initiative to create a Walloon Institute of Technology Assessment. It emphasized the institute's role in policy making and in stimulating societal debate, its independence and location within the regional parliament, and its reliance on a network of experts and participatory methods, according to the authors. However, the creation of the institute was blocked by different conceptions of the Wallonia future: the TA institute should either work exclusively for the Walloon region (parliament and government) or also include the French community (e.g., the Brussels Capital Region) (see Delvenne et al. 2015).

At present, an approved parliamentary decree to solve the blockage "remains in the limbo of the legislative process" (Delvenne et al., 2015: 22). Also Hennen and Nierling (2014), referring to the TA activities in Wallonia, note this region already has a history of debate in its political system. Based on the study of Delvenne et al. (2012), they emphasize that there have been several initiatives in this region to set up TA capacities related to the government and the parliament. Just at the very moment when the research activities started, the decision to set up a TA institute was taken officially. Parliament and government are mentioned as the main addressees, but there is a lively political debate on the polity a TA institute should address: the Walloon region or the Wallonia–Brussels Federation.

The Portuguese Social Dynamic

The first initiatives to install a body providing scientific advice for science policy in Portugal date back to the 1960s, still during the dictatorship. In the early part of the decade, a special office was established to carry out assessment studies and economic studies to support the yearly national budget and the four year planning, named GEBEI

(Portuguese Office for Basic Studies on Industrial Economy, at the Ministry of Finance and Planning). In the end of the decade, the National Board of Scientific and Technological Research (JNICT) is created. Its mission was to plan, coordinate, and stimulate S&T research and to advise the government on national science policy.

Later, in the late 1980s, JNICT assumed the tasks of developing the national S&T system, sponsored the large national laboratories, and created a larger scientific community and new research centers (Böhle and Moniz 2015). JNICT managed a national program to support economically productive structures (co-financed by the structural funds from the European Community) and was responsible for research and publication of many studies on sectors, regions, and cases (Böhle and Moniz 2015). In the late 1980s, TA-like activities were mainly being carried out by the public sector (Gonçalves and João Caraça 1987).

TA-related activities continued to exist in different forms during the 1990s, when Portuguese experts and social scientists were involved in different European initiatives (Böhle and Moniz 2015). Furthermore, in the later part of this decade, TA activities were significantly influenced by the debate about the location of facilities to co-incinerate dangerous substances. During discussions about the danger posed to populations, the visible differences between scientists created a public perception of uncertainty and controversy (Alves 2011).

The debates were polarized and significantly adversarial, involving the affected populations, parliamentarians, members of government, and scientists. Overall, the debate led to an unprecedented shift in the role played by scientific commissions: their role moved from providing advice to exercising real decision-making power, in some matters leaving scientists to make decisions about political action, according to the authors. Since then, there has been a growing effort to ensure the

independence of scientific committees and their members (Alves 2011). The dispute about co-incineration was long and marked by the "Not In My Back Yard" syndrome (Alves 2011). In fact, in 2014 the decision was still being questioned by a local group in the Constitutional Court.[50]

In addition, there were other important cases of public unrest with science, such as the threat of a H1N1 pandemic, the location of a third bridge across the Tagus River outfall, the location of the new airport in the Lisbon area, the plans for the high-speed railway, and recently a national legionella outbreak. These cases led to different solutions and sometimes involved loud public controversies between actors and stakeholders. Overall, the different solutions that were implemented contributed to an increase in the public's perception that scientific uncertainties and controversies relevant to policy making should be mediated by neutral actors.

The future developments in the national panorama of TA are still uncertain. On one hand, there are important national limitations to further TA developments. In fact, analysts mentioned the adverse impact of the insufficient involvement of stakeholders in decisions, the lack of a sound public opinion, the disconnect between the S&T system from economic structures, and the limited interactions between relevant ministries (Böhle and Moniz 2015). On the other hand, the combination of four interlinked dynamics provides room for more optimism. First, there are several PhD projects under development and preparing practitioners to deal with TA issues. In fact, the launching of a PhD program on TA at the University Nova Lisbon in 2009/10 created space to develop 20 research projects around TA issues in the country and generated a significant social dynamic around the topic. The research programs

50 "Co-Incineração de Resíduos Em Souselas No Tribunal Constitucional." *Lusa*. 17/01/2014.

cover topics from health TA studies, mobility and transport, brain-computer interfaces, innovation and STS, and cloud computing (Böhle and Moniz 2015).

Second, a national TA network named GrEAT exists since 2010 disseminating information and promoting regular contacts with other STS experts in Portugal. The network has been strengthened not only by an internal dynamic supported in the PhD program, but also by its involvement in parliament since 2010 and by its acceptance as an EPTA[51] observer institution in 2013.

Third, there is a consistent dynamic in the national parliament, rooted in the Commission for Education, Science and Culture. In 2009, parliament recognized the need to develop activities towards the development of PTA.[52] A report in 2013 suggested a proposal that failed to implement a TA unit inside the parliament.[53] The reasons for this failure are still unclear. Böhle and Moniz (2015) suggested that the failure rested on the lack of financial resources or in the organizational maladjustment of this unit, but a lack of consensus about the proposal is also conceivable. Nevertheless, recognition of the need for PTA led in 2014 to a series of hearings about the possible formats of the TA unit and PTA functions in parliament.[54], [55] At the present, several proposals are under discussion in parliament and GrEAT is contributing to overcoming the blockage

51 EPTA is the acronym of the network for *European Parliamentary Technology Assessment.*

52 Resolução da Assembleia da República No. 60/2009 – Aprofundamento das Actividades da Assembleia da República nas Áreas da Ciência e Tecnologia. Lisboa: Assembleia da República.

53 "Relatório Final – Avaliação Tecnológica Parlamentar." Comissão de Educação, Ciência e Cultura. 2013. Lisboa: Assembleia da República. http://avaliacaotecnologia.files.wordpress.com/2013/03/relatorio-rui-santos.pdf.

54 "Ata Número 178/XII/3a SL 19 Fevereiro 2014 – 10h00." Comissão de Educação, Ciência e Cultura. Lisboa: Assembleia da República.

55 "Ata Número 182/XII/3a SL 11 Março 2014 – 15h00." Comissão de Educação, Ciência e Cultura. Lisboa: Assembleia da República.

created in 2013 (Böhle and Moniz 2015). Fourth, there is a favorable external context where academic cooperation (particularly with ITAS/KIT[56]), European projects, and the EPTA network play a major role. The cooperation with ITAS/KIT has anchored strong scientific capabilities to the PhD program. For example, the support from ITAS/KIT allowed not just the development of several PhD theses, but also recent visits to Japan that helped to cement relations, exchange ideas, and launch this present book, among other activities.

The European projects have provided a framework to establish important international scientific and policy contacts. Lastly, the EPTA network allowed the recognition of GrEAT as a player in the national and international TA panorama, recognizing the network as a valid player in PTA debates in Europe. In sum, the context in Portugal combines adverse conditions with a significant social dynamic aiming to promote more TA activities in the country. Stronger TA activities are expected in the near future, as more PhD theses are discussed and these professionals play a role in the labor market.

Other Eastern and Central European Countries

TA is widely unknown in some Central and Eastern European countries. A possible explanation for this ignorance can be linked to the public's perception of science. In fact, science in Eastern countries served for a long time as an instrument of political propaganda, where scientists were ordered to create evidence to support the Soviet political regime (Leichteris 2015). Thus, it is not surprising that science-based policy

[56] ITAS/KIT is the acronym of the Institute for Technology Assessment and System Analysis at the Karlsruhe Institute of Technology.

advice is an area regarded with suspicion by the general public in these countries, according to Leichteris.

Furthermore, other problems for TA activity are related to a lack of understanding of the concept, the inflexibility of the current system, the danger of a politicization of such attempts, the concentration of decisions in the government rather than in the parliaments, and the lack of financing and skills (Leichteris 2015). However, there are some positive trends in these countries. In fact, the Czech Republic, Hungary, and Poland have had some experience in activities similar to TA, especially in technology foresight (Michalek et al. 2014; Leichteris 2015). The Czech Republic also revealed signals in health TA practice, which is starting to appear in Czech universities (Michalek et al. 2014).

Lithuania and Bulgaria were described as in transition towards problem-oriented research and interdisciplinary research (Leichteris 2015). Their TA-like activities often rely on consultancy work done by private companies, and is usually initiated by measures of the European Union or the OECD, according to Leichteris.

As mentioned by Hennen and Nierling (2014), it is apparent that all these advisory institutions (like science academies, research councils) "give strategic advice with regard to the future development of research and innovation strategies, which is motivated by national efforts to improve the competitiveness of the national economy ("economy first"). These authors also say that in Central and Eastern European countries this may be related to a great extent to the conflicting character of the ongoing and long-lasting political transition period from a nondemocratic system to a democratic one, using as a reference the work of Roland on transition processes (2002). Therefore, the overall situation of the Central and Eastern European countries towards TA can be described as

unenthusiastic, although there are some TA-like activities being developed in some countries.

Conclusions

There are different levels of TA efforts in European countries and regions without PTA. Those with more PTA-like activities are Catalonia, Wallonia, and Portugal. There are also other dynamics with closer links to the parliament in Bulgaria and the Czech Republic, and other developments grounded in research and innovation structures in Hungary and Lithuania. Consequently, the possibilities for the emergence of TA in these countries and regions vary significantly. The example of Catalonian PTA started in 1999 and it was established in 2008 under the explicit will of the regional government and parliament. It now functions closer to a shared parliament-science model, producing reports and advice with no staff or budget. The Wallonia experience is also a significant dynamic in the European TA landscape and might even produce a TA institution in the short term. In the Portuguese case, unfavorable national characteristics challenge a dynamic academic base and the will of the national parliament, both significantly supported by a favorable international context. The experience of the Eastern and Central European countries are mostly marked by TA-like activities and face considerably adverse contexts. In sum, there are different levels of efforts in the European panorama, in which the local context appears to be relevant to understand what is going on under the present supportive European setting.

It seems to be true that different national contexts imply cultural settings and political specificities, which lead to different approaches to TA institutionalization. However, what appears to be more important, from our review of the cases, is to understand the extent of the social dynamic around the public production of knowledge and its

links to the development of democratic institutions. In fact, these countries and regions have found their own and unique ways to solve their needs for TA by embedding the production of knowledge wherever possible in their own structures.

Jasanoff (2005) also mentioned the institutionalized practices by which members of a given society test and deploy knowledge claims used as a basis for making collective choices. In some cases, these social dynamics were linked to the local parliament and in others they remained far from it. But, most importantly, these dynamics do not necessarily need to be channeled through the institutionalization of a new specialized organization.

We can conclude that TA institutionalization in non-PTA countries appears to be dependent on the level of public production of knowledge. In fact, the presence or absence of S&T issues on the public agenda of these countries and regions affects the need for parliamentary policy advice: in their presence, S&T agenda pushes the need for TA advice by parliamentarians; in their absence, the promotion of innovation tries to keep up with globalization pressures and to generate economic growth, without significant demands for TA advice.

In the later case, the difficulties in deepening participation in democracy and the absence of transparent decision-making structures may lead to the lack of public involvement, trust, competence, and strategic long-term thinking. Nevertheless, it may happen that the public distrust in political systems and dissatisfaction with existing structures can be transformed into an opportunity or a barrier to institutionalization of independent policy advice. The answer to such a question may be answered by further studies on this issue.

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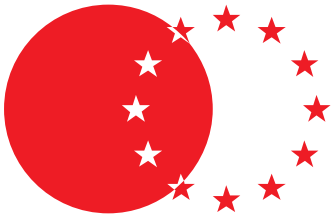

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